

**Via Facsimile to: RCE (571) 273-8300**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of Evans, et al.	)	Group Art Unit:	1751
	)		
Serial No.: 09/910,497	)	Confirmation No.:	9692
	)		
Filing Date: 07/19/2001	)	Docket No.:	290397.0007
	)		
For: NON-AQUEOUS HEAT TRANSFER	)	Customer No.:	21832
FLUID AND USE THEREOF	)		

Mail Stop: Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION OF JOHN EVANS**

I, John Evans, do hereby declare and say as follows:

1. I am an inventor of the above-referenced patent application regarding methods for use of a non-aqueous heat transfer fluid and the Chairman of the assignee of the patent application, Evans Cooling Systems, Inc. As discussed in detail in the Response to Office Action filed herewith, the application as presently amended claims non-aqueous heat transfer fluids comprised of more than 60% by weight ethylene glycol, a second diol such as propylene glycol, that acts as an inhibitor to ethylene glycol poisoning, and additives that are soluble in ethylene glycol and the second diol. The application also claims methods for reducing the toxicity of a non-aqueous ethylene glycol based heat transfer fluid by addition of a diol that acts as an inhibitor to ethylene glycol poisoning.

2. As set forth in the claims presently presented and described in the application at, for example, pages 15-17, the non-aqueous heat transfer fluids recited in the methods of the invention have freezing points at atmospheric pressure of minus 10° C or less and boiling points at atmospheric pressure of 150° C or greater.


3. I have reviewed Newell, U.S. Patent No. 4,293,441. From my review, it is my understanding that Newell describes a fluid for minimizing corrosion of aluminum surfaces which includes a phosphonic acid that has relatively low solubility. In concentrated solutions (i.e. smaller amounts of water), Newell "stabilizes the solution" with "a non-ionic surfactant". Col. 6, lines 9-14. Newell states that "For use at elevated temperatures, for example, at temperatures above 100° C, little or no water need be added to the glycol/fluoroaliphaticphosphonic acid solution." These statements indicate to one skilled in the art that at elevated temperatures, the need for water in the fluid described by Newell is reduced due to increased solubility. This would also lead one skilled in the art to believe that at lower temperatures, water must be added to the fluid described by Newell to maintain the additives in solution and for proper functioning of the additives.

4. As set forth in the claims presently presented and described in the application at, for example, page 14, lines 8-11, the non-aqueous heat transfer fluids recited in the methods of the invention contain no additives that require that water be present in the fluid.

5. I have reviewed Wood, U.S. Patent No. 4,455,248. Wood describes an antifreeze composition for use in automotive cooling systems or other heat transfer services. From my review, it is my understanding that the composition described in Wood contains sodium metasilicate. As set forth in the information sheet from the Occupational Safety & Health Administration attached as Exhibit 1, sodium metasilicate is insoluble in alcohol, and requires the presence of water to remain dissolved in a heat transfer fluid.

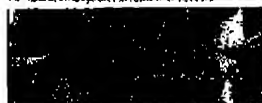
I, the undersigned, declare further that all statements made herein are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: August 18, 2005

  
John W. Evans

HARTFORD: 645444.01  
97341-00018

## EXHIBIT 1

**U.S. Department of Labor**  
Occupational Safety & Health Administration**Chemical Sampling Information:**  
**Sodium Metasilicate****General Description**

**Synonyms:** Silicic Acid (H<sub>2</sub>SiO<sub>3</sub>) Disodium Salt; Crystamet; Disodium Metasilicate; Disodium Monosilicate; Orthosil; Metso Beads, Drymet; Sodium Metasilicate, Anhydrous; Sodium Silicate; Water Glass

**OSHA IMIS Code Number:** S245

**Chemical Abstracts Service (CAS) Registry Number:** 6834-92-0

**NIOSH, Registry of Toxic Effects (RTECS) Identification Number:** VV9275000

**Chemical Description and Physical Properties:** Usually obtained as a glass; also orthorhombic crystals. Usually prepared from sand (SiO<sub>2</sub>) and soda ash (NaCO<sub>3</sub>) by fusion. Soluble in cold water, hydrolyzed by hot water. Insoluble in alcohol, acids, salt solutions.

**molecular formula:** O<sub>3</sub>Si•2Na

**molecular weight:** 122.07

**melting point:** 1089°C

**Health Factors**

**Health Effects:** Severe skin irritation; inhalation of dusts can irritate upper respiratory tract.

**Monitoring Methods used by OSHA**

**Laboratory Sampling/Analytical Method:**

- **note:** Call SLTC for Instructions.

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Occupational Safety & Health Administration  
200 Constitution Avenue, NW  
Washington, DC 20210

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